

**NEW SPECIES OF GECKOBIA (ACARINA, PTERYGOSOMIDAE)  
FROM AUSTRALIA AND NEW ZEALAND**

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[Read 9 October 1941]

The family Pterygosomidae contains a number of genera of mites which are confined to lizards, particularly of the families Geckonidae, Agamidae, Zonuridae and Gerrkosauridae. The general taxonomy and classification of the family has been admirably and fully dealt with by Hirst (A.M.N.H. (8), 19, 136-143, 1917; J. Linn. Soc., (Zool.), 36, 173-200, 1924) and Lawrence (Parasitology, 27, (1), 1-45, 1935; *ibid*, 28, (1), 1-39, 1936).

The genus *Geckobia* is confined to the Geckonidae and as yet is the only one known to occur in Australia or New Zealand. Previously only one species (*G. clelandi* Hirst, *loc. cit.*, 1917, 138, 1924, 175) has been recorded from Australia and none<sup>(1)</sup> from New Zealand. *G. clelandi* was found on *Gymnodactylus platurus* from Narabeen and Sydney, New South Wales, by Dr. J. B. Cleland.

In some parts of the world, notably South Africa, New Guinea and India, this group of acarina is well represented, much more so than in Australia or New Zealand; but doubtless in the latter countries this is due to lack of collecting. A second species is now described from Australia and two from New Zealand.

The Pterygosomidae occur upon various locations of their hosts, and particular locations appear to be restricted to particular species of mite. They may be found in the folds of skin around the eyes, in the tympanum, between the toes and in the armpits, and also under the scales.

Of the early stages little is known, but Lawrence has described the larvae and nymphs of several South African species. In the present paper the nymph and a subsequent pupal or resting stage in the new Australian species are described and figured.

The genera of the Pterygosomidae may be separated thus:

- |   |   |
|---|---|
| 1 Dorsal scutum present, sometimes divided into two lateral portions.                   | 2 |
| Dorsal scutum entirely wanting.   | 3 |
| 2 Dorsum with few setae, these very long. Body longer than wide.                        |   |
| Gen. <i>Pimeliophilus</i> Trgdh., 1905  |   |
| Dorsum with numerous setae, these shorter. Body usually wider than long.                |   |
| Gen. <i>Geckobia</i> Mcgnin, 1878   |   |
| 3 Apex of hypostome much enlarged. Dorsum with few setae.                               | 4 |
| Hypostome subparallel. Dorsum with numerous setae.                                      | 5 |
| 4 Body longer than wide. Size larger. Skin leathery.                                    |   |
| Gen. <i>Ixodiderma</i> Lawrence, 1935   |   |
| Body much wider than long. Size smaller. Skin not leathery.                             |   |
| Gen. <i>Scaphothrix</i> Lawrence, 1935  |   |
| 5 Body very much wider than long.   | 6 |
| Body longer than wide.  | 7 |
| 6 Dorsum with a dense anterior patch of setae on each side of mouth parts. Eyes absent. |   |
| Gen. <i>Pterygosoma</i> Peters, 1849  |   |
| Dorsum without such patches of setae. Eyes present.                                     |   |
| Gen. <i>Zonurobia</i> Lawrence, 1935  |   |

<sup>(1)</sup> In 1919 (N.Z. Jour. Sci. and Tech., 2, 163) A. B. Dove refers to the occurrence of "small red ticks" on species of *Lygosoma*. The microphotographs shown, however, prove that these are not "ticks" but a species of Geckobidae.

7 Setae on dorsum few.

Gen. *Hirstiella* Berlese, 1920

Setae on dorsum numerous and somewhat enlarged distally.

Gen. *Geckobiella* Banks 1905

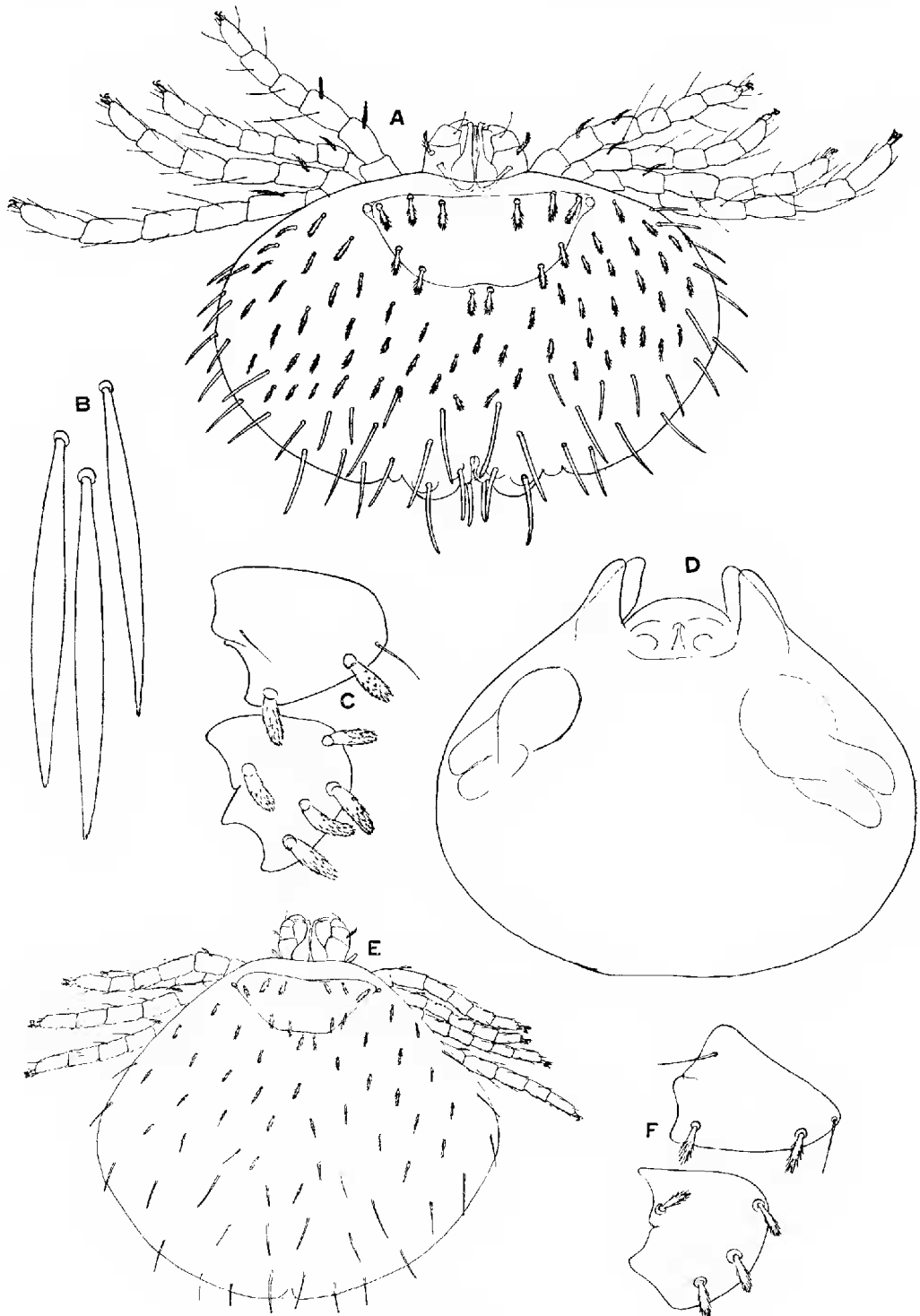


Fig. 1

*Geckobia gymnodactyli* n. sp.: A, dorsal view; B, posterior ventral setae; C, right coxae; D, pupa; E, nymph from above; F, nymphal coxa.

Genus *GECKOBIA* Megnin

MEGNIN, P. 1878 Bull. Soc. ent. Fr., (5), 8.

***Geckobia gymnodactyli* n. sp**

(Fig. 1, A-F)

*Description, Female*—Colour in life red. Body rather depressed, wider than long,  $425\ \mu$  by  $310\ \mu$ . Gnathosoma basally hidden beneath body,  $50\ \mu$  long. Scutum wider than long, as figured,  $175\ \mu$  by  $86\ \mu$ , posterior margin medially slightly concave, setae 10 in number, rather short, stout and ciliated,  $30\ \mu$  long, arranged 6 along anterior and 4 along posterior margin; in addition there is a pair of similar setae just off the posterior concavity. Eyes, one on each side at the extreme lateral angles of the scutum. Palpi and mandibles normal for the genus, as figured for *G. haplodactyli*; palpal femur with a thick, ciliated seta. Dorsal setae of two forms as figured; marginal and on posterior fourth simple, thick and rather blunt tipped, to  $55\ \mu$ ; remainder similar to but rather smaller than scutal setae. Ventrally without scales, the first four rows of close-set setae similar to anterior dorsal setae; those on remainder of venter rather close-set and as figured, to  $55\ \mu$  in length.

Legs without any special protuberances, fairly and uniformly thick, I  $135\ \mu$ , II  $162\ \mu$ , III  $200\ \mu$ , IV  $216\ \mu$ ; second and third segments of I and second of II, III, and IV with a ciliated thick seta; coxa in two conjoined pairs as figured, I and II with two long fine setae, and two thick ciliated setae; III and IV with 5 stout ciliated setae; claws typical of the genus and as figured for *G. haplodactyli*.

*Pupa or Resting Stage:*

This stage was found within the cuticle of the ? protonymph, and the slightest pressure caused the cuticle to split dorsally and the pupa to be extruded. The pupa was as figured,  $300\ \mu$  wide by  $260\ \mu$  long, with the processes, in which the future legs would develop, plainly showing. No development of the next stage, however, was evident in any specimen.

*? Protonymph or Prepupal Stage:*

Similar in shape and chaetotaxy to the adult. Width  $310\ \mu$ , length  $270\ \mu$ . Dorsal setae similar to, but fewer than in adult. Coxae III and IV with only 4 thick ciliated setae as described by Lawrence for the nymph of *G. phyllodactyli*. Scutum  $140\ \mu$  wide,  $75\ \mu$  long, its setae  $27\ \mu$ . Posterior dorsal setae  $40\ \mu$ . Coxal setae  $16\ \mu$ .

*Locality*—A number of adult females and nymphs from between the toes of a gecko, probably *Gymnodactylus morio*, from Humbug Scrub, near Adelaide, South Australia, 1 October 1938 (J. S. W.).

*Remarks*—Differs from the only other known Australian species, *G. clelandi* Hirst, in shape, chaetotaxy, and the longer fourth pair of legs. Comes nearest to *G. malayana* Hirst from the Malay Peninsula, but differs in the entire scutum and the arrangement of setae on the scutum.

***Geckobia haplodactyli* n. sp**

(Fig. 2, A-H)

*Description, Female*—Colour in life red. Body longer than wide,  $1100\ \mu$  by  $900\ \mu$ , not depressed. Gnathosoma well in front of body,  $255\ \mu$  long. Mandibles and palpi as figured; palpal setae simple. Dorsal scutum short and wide, as figured,  $85\ \mu$  by  $390\ \mu$  with numerous thick and blunt apically serrated setae. Eyes at extreme lateral corners of scutum. Dorsal setae numerous but not so numerous

as in the following species, to  $54\ \mu$  long, thick and slightly tapering to blunt point, without serrations. Dorsum medially just behind scutum and posteriorly devoid of setae.

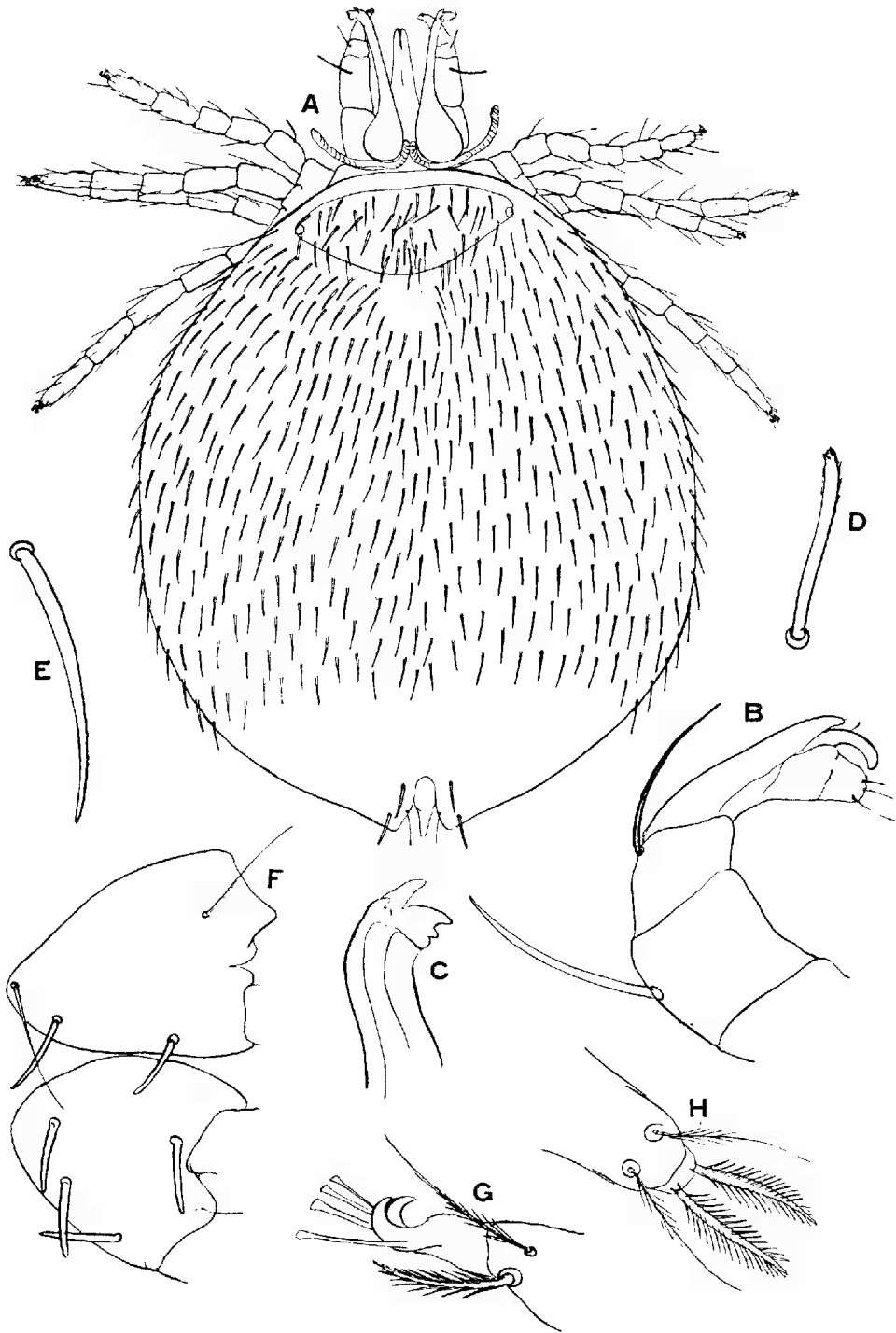


Fig. 2

*Geckobia haplodactyli* n. sp.: A, dorsal view; B, palp; C, tip of mandible; D, scutal seta; E, dorsal seta; F, right coxae; G, tip of tarsus and claws from side; H, tip of tarsus from above, claws omitted.

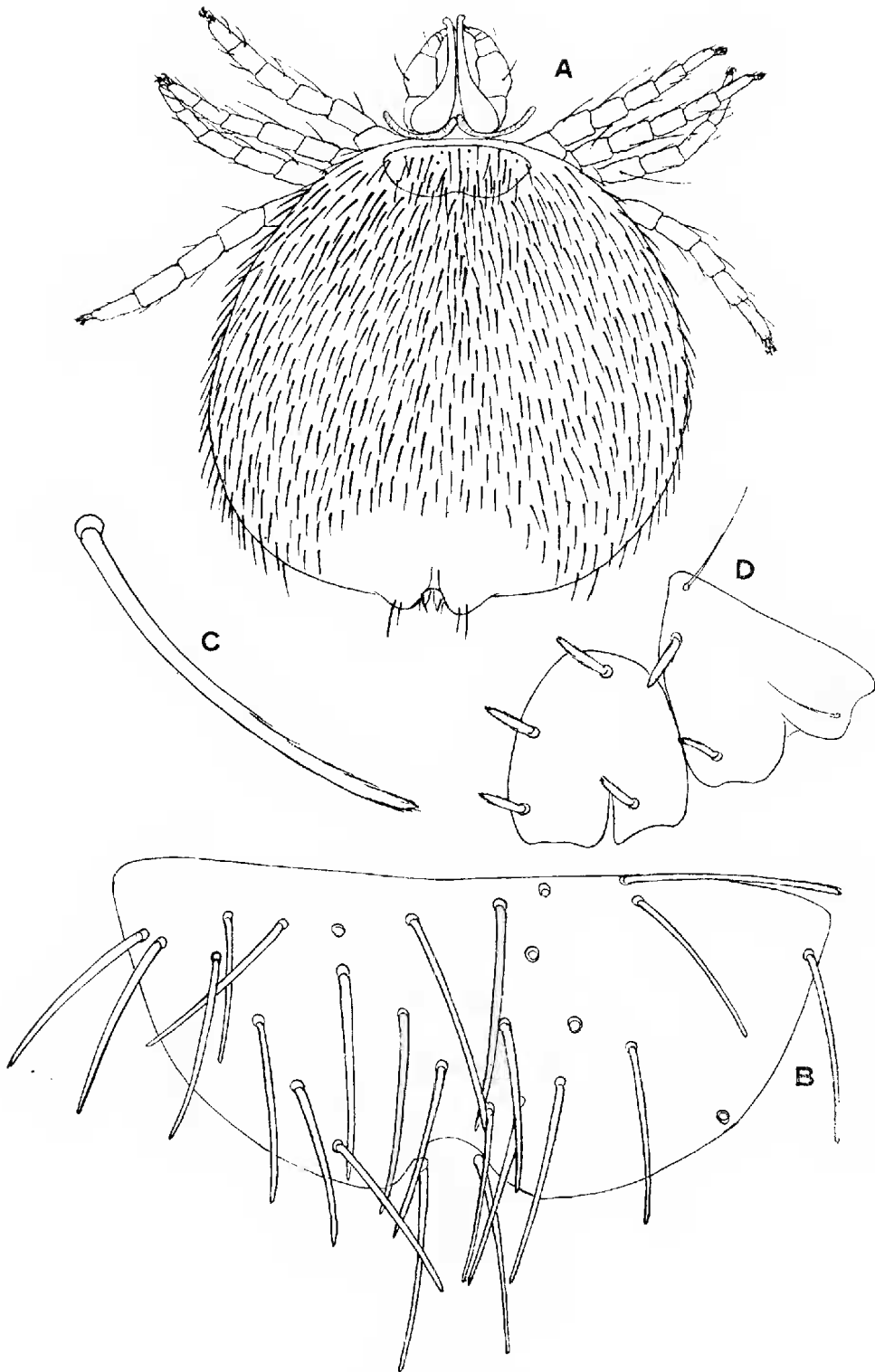


Fig. 3

*Geckobia naultina* n. sp.: A, dorsal view; B, dorsal scutum; C, scutal seta;  
D, right coxae.

Legs fairly slender and uniform without any special protuberances, I 380  $\mu$ , II 370  $\mu$ , III 420  $\mu$ , IV 480  $\mu$ , no ciliated setae on basal segments; coxae as figured, I and II with two fine and two thick simple setae; III and IV with four thick simple blunt setae. Ventrally without scales and chaetotaxy similar to dorsum.

*Locality*—From the skin folds of the eyes of *Haplodactylus duvaucellii* from New Zealand. I am greatly indebted to Mr. N. G. Stephenson, of Takapuna, Auckland, New Zealand, for the loan of the gecko from which these specimens were obtained.

***Geckobia naultina* n. sp.**

(Fig. 3, A-D)

*Description, Female*—Colour in life ?red. Body about as long as wide, 760  $\mu$  by 760  $\mu$ , not depressed. Dorsal scutum small, as figured, 256  $\mu$  wide by 108  $\mu$  long, with many long, thick and blunt setae. Eyes ?. Gnathosoma entirely projecting in front of body, 220  $\mu$  long. Palpi and mandibles normal, no ciliated seta on palpal femur. Dorsum with very numerous uniform setae which are rather thick and indistinctly serrated in apical half, to 70  $\mu$  in length. Legs fairly slender, I 270  $\mu$ , II 310  $\mu$ , III 335  $\mu$ , IV 380  $\mu$ , without ciliated stout setae; third segments of I, II, and III with a long setae. Venter without scales, with chaetotaxy similar to dorsum; coxae as figured, I and II with two fine and two stout incrassate serrated setae, 30  $\mu$  long, III and IV with four such.

*Locality*—Several specimens from a gecko, *Naultinus* sp, from Auckland, sent by Mr. N. G. Stephenson.